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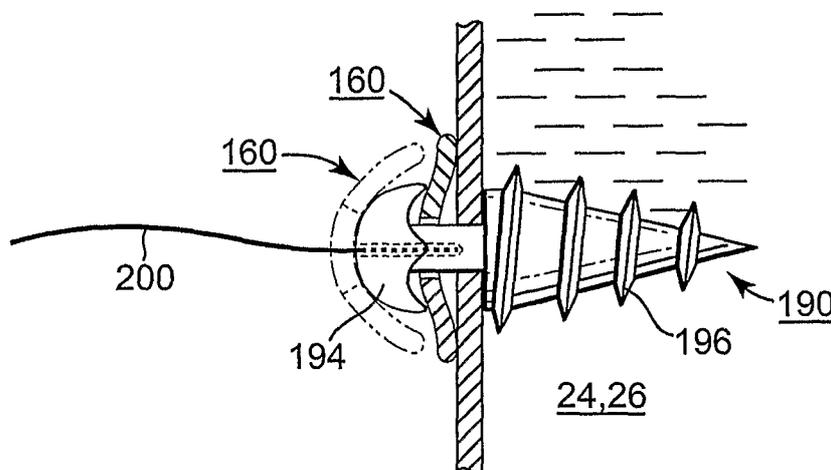
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(54) Title: APPARATUS FOR SECURING A URETHRAL SLING TO PUBIC BONE



(57) Abstract: Surgical procedures, kits and implants for alleviating human incontinence, and particularly providing improved methods and apparatus to secure a urethral sling to pubic bone in a sub-urethral location to support the urethra and alleviate incontinence are disclosed. Bone anchors, e.g., bone screws, are driven into pubic bones with exposed bone anchor heads and necks configured to receive and support a urethral sling applied to the bone anchors with and without retainers applied against the urethral sling to retain portions of the urethral sling between the bone anchor heads and the pubic bones.

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AMENDED CLAIMS

received by the International Bureau on 15 December 2006

1. A surgical kit comprising:

a urethral sling (30) having opposed sling sides (36, 38) and extending between a first sling end (32) adapted to be coupled to a first pubic bone (24) and a second sling end (34) adapted to be coupled to a second pubic bone (26) to fix the urethral sling in a sub-urethral location to support the urethra (20) and alleviate incontinence, the urethral sling having or capable of having a sling opening (40) formed through the sling adjacent each of the first and second sling ends;

at least one bone anchor (50; 100; 110; 150; 170; 190; 260; 320; 350; 370; 390) comprising an anchor body having an anchor body axis and extending from a distal bone fixation mechanism (56; 116; 156; 176; 196; 266; 326; 356; 376; 396) adapted to be attached to pubic bone through an anchor neck (58; 112; 158; 178; 198; 268; 328; 358, 362; 378; 398) having a neck dimension lateral to the anchor body axis to a proximal anchor head (54; 120; 154; 174; 194; 264; 330; 355; 375; 400) having a head dimension lateral to the anchor body axis exceeding the neck dimension, whereby the urethral sling is adapted to be applied against the anchor head to insert the anchor head through the sling opening and engage the sling with the anchor neck; and

at least one sling retainer (160; 16O₁ - 16O₆; 164; 222; 252; 335; 345) having a retainer dimension exceeding the head dimension adapted to be engaged by one of the anchor head and the anchor neck and applied against the urethral sling, whereby the sling retainer is adapted to be interposed between the urethral sling and the anchor head to retain the sling attached to the bone anchor.

The Written Opinion mailed October 17, 2006, indicates in item IH that the Claims 1 - 32 are directed to multiple inventions, and indicates in item V that Claims 1 - 23 have been searched and meet the requirements of the PCT in light of US Patent No. 6,544,273 with respect to novelty and inventive step. Claims 24 - 32 are found in item III to be directed to one or more separate invention than that set forth, in Claims 1 - 23, and conclusions about novelty and inventive step are not expressed. It is applicant's understanding that a decision on prosecution of Claims 24 - 32 in the next stage may be postponed, and no action is taken herein with respect to those claims.

Certain defects in Claim 1 and the specification are noted in the Written Opinion. Substitute sheets are enclosed bearing amendments to Claim 1 and paragraphs 0035 and 0003 are enclosed in response to the concerns expressed in the Written Opinion mailed 17/10/2006.

Corrections to Claim 1 include the insertion of -be- in line 9 and changing "between." to -from- in line 10 per the comments in paragraph 2 of item V of the Written Opinion, and the insertion of -each of- in line 7 per the comments in paragraph 1 of item VUI of the Written Opinion.

Paragraph 0035 is changed to delete "or that are not transverse to the bone anchor axis", thereby altering the definition of lateral and laterally to reference dimensions or directions or vectors that are substantially transverse to the bone anchor axis per the comments in paragraph 2 of item VIII of the Written Opinion.

Paragraph 0093 is changed to delete "One such bone screw 64 with the pair of bone screw sutures 84 extending from the screw head is depicted in the expanded view of FIG. 5.", per the comments in item VH of the Written Opinion.

The application pages containing these changes are enclosed.

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Paragraph 0093 is changed to delete "One such bone screw 64 with the pair of bone screw sutures 84 extending from the screw head is depicted in the expanded view of FIG. 5.", per the comments in item VH of the Written Opinion.

The application pages containing these changes are enclosed.